

REMARKS

Applicant sent five sheets of formal drawings (postcard receipt returned). However, the receipt of the drawings was not acknowledged by the examiner in item 10 of the office action summary.

The examiner's comment re page 5, lines 26-29 is not understood; clarification or a suggested change is requested or the objection should be dropped.

Regarding the first objection to the specification, the upper case "Figures" on pages 8 and 9 have been changed to lower case figures.

Regarding the page 7, lines 7-9 objection to the specification, the inconsistency between "hydrostatic circuit" and "hydrostatic resistance network has been corrected.

Regarding the page 9 typos, the parenthesis has been closed and the "two periods" have been removed.

Regarding the objection/rejection of paragraphs 2-4 of the office action, these are now moot owing to the changes in this amendment.

The rewritten claims have omitted the "two elongated sensor" language mentioned in paragraph 4 on page 3 of the office action.

All prior claims were previously rejected as being unpatentable under 35 U.S.C. 103 over Ehrenfried et al., 4,967,594 (the primary reference) in view of a publication of "Solinst." In order to even more particularly point out and distinctly claim the differences between applicant's invention and the prior art, all prior claims have been rewritten as claims 44-70.

The subject matter of the newly applied secondary reference to Ehrenfried was discussed by applicant on page 3 of the specification and applied secondary publication describing the applied prior art Solinst tape wound on a reel was discussed in detail on pages 1 and 2 of applicant's original specification. The problems with the "Solinst" tape wound on a reel approach employing an IR beam were discussed in substantial detail on page 2 and thus are not repeated in detail here. As explained in the specification, applicant's claimed invention has eliminated these problems, including tape reading errors, tedious winding and unwinding of tape into and out of each well needed to read liquid levels, in contrast with the invention, and cross-contamination between wells as the tape is transported from one well to another. The tape reel method of Solinst functions something like a huge flexible dipstick used to measure liquid layers (think auto oil dipstick).

The newly cited primary reference to Owens 4,368,639 discloses a hydrostatic pressure sensor extending down into a tank and a device for merely detecting whether water is present at the bottom of the tank.

None of these references taken singly or in combination teach the subject matter of the newly redrafted claims 44-70. Independent claim 44 specifies the combination of:

(a) a conductive liquid sensing circuit, including a first resistive network extending down the entire length of said well, for sensing electrically conductive liquids only;

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(b) a hydrostatic sensing circuit that responds to the actuation pressure of conductive and non-conductive liquids, said hydrostatic sensing circuit including a second resistive network extending down the entire length of said well; and

(a-3) a well depth sensing circuit, including a third resistive network resistors extending down the entire length of said well.

Importantly, all independent claims except claim 60 call for the positioning of the elongated sensor along the length of the well before measurements are taken. Please see claim 44 (b); 52 (a); 69 (a); and 70 (a). The exception is claim 60 which is a product claim that can be separately marketed for the specific purposes discussed. This claim however calls for the sensor having all three resistive networks. Independent claims 44, 52, along with claim 60 also call for the three resistive networks not suggested by the references taken singly or in combination. It is respectfully submitted that the underlined limitations of this paragraph are not fairly taught by the references taken singly or in combination. This is in obvious contrast with the use of the Solinist tape with all of its problems discussed by applicant at the beginning of the specification. The claimed invention has solved these problems and has thus contributed to the advancement in the art.

Applicant notes the prior allowance in substance of the subject matter of claim 44 (a-3); also 52 (e); 69 (b-4). Please see page 17, paragraph 6 of the office action allowing measurement from the well bottom.

To sum up, the present invention provides the new and beneficial results discussed on pages one and two of the original specification, and in this and the previous amendment, wherein cross-contamination between wells, tedious and time consuming readings and error prone recordation of numbers on the flexible tape of Solinist, that is inserted into and removed from the well, have been eliminated. Preferably, a portable data processor is desired to quickly, easily, and more accurately make the readings.

However, since applicant's sensor tape can be read and recorded manually by a person with an ohm-meter and a clip-board without the preferred data processor, applicant should be entitled to independent claim

60 defining the sensor tape per se that can be optionally be marketed without the data processor.

It is respectfully submitted that the remaining dependent claims are allowable since they are dependent on the independent claims discussed above. Some dependent claims also would stand alone and not fall with a rejection of the independent claims on appeal.

For example, claims 46 and 47 call for data produced by execution of the steps of claim 44 being recorded by a portable digital processor temporarily connected to the top of the well. This quick and easy process greatly simplifies the entire time consuming and error prone Solinist technique as previously explained. Claims 48-51 call for permanently installing the elongated sensor within the well to eliminate the Solinist drawbacks. While permanent installation of the tape is preferred, the tape conceivably could remain in the well between readings for shorter time periods e.g. by leasing the tape. However, the present invention calls for positioning of the elongated sensor along the length of the well before the measurements are taken. This is in obvious contrast with the use of the Solinist tape.

It should now be apparent that the newly submitted claims define subject matter that differs substantially from the references in "means, function and result", while providing the aforesaid advantages.

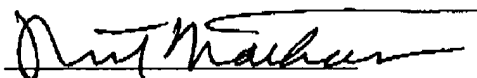
Applicant also regards his invention as embracing measuring the thickness of the LNAPL layer and the DNAPL layer which may be present without gauging the water column which may not be of interest for a particular application. Thus, applicant should be entitled to claim 69 that would not require employment of the third resistive network. The measured resistive difference between the first and second network indicates the thickness of the LNAPL layer (b-3), and the measured resistance of the first network from the well bottom determines the thickness of the DNAPL layer (b-4) which was previously allowed in substance.

Should the examiner still deem the application not in condition for allowance, the examiner is respectfully requested to make any suggestions in a telephonic interview or otherwise that may further advance prosecution in accordance with the mandate of MPEP 707.07 (j); page 700-101 8th Ed. : "When an application discloses patentable subject

matter and it is apparent from the claims and applicant's arguments that the claims are intended to be directed to such patentable subject matter, ...the examiner should not stop with a bare objection or rejection of the claims. The examiner's action should be constructive in nature and where possible, should offer a definite suggestion for correction."

Regarding a prior comment of the examiner, there is no requirement that a claimed invention attain an "unexpected result" before a conclusion of nonobviousness may be reached. *Panduit Corp. v. Dennison Manufacturing Co.*, 1 USPQ 2d 1593 (Fed. Cir. 1987). "New, non-obvious results" are more to the point.

An early allowance is respectfully solicited.



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(978)-667-3060